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DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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September 10, 1999

Ronald Bosshardt  
Redmond Minerals, Inc.  
6005 North 100 West  
Redmond, Utah 84652

Re: Conditional Tentative Approval of Revised Notice of Intention to Commence Large Mining Operations. Redmond Minerals, Inc., South RCR Salt Mine, M/039/002, Sevier County, Utah

Dear Mr. Bosshardt:

The Division has completed its review of your February 19, 1999, response to our initial completeness review of your revised Notice of Intention to Commence Large Mining Operations for the South RCR Salt mine, located in Sevier County, Utah. After reviewing the latest information and receiving verbal clarification during an August 24, 1999, meeting with Arjun Ram regarding some of the outstanding issues, we are now prepared to grant conditional Tentative Approval of your Revised Notice of Intention to Commence Large Mining Operations.

A number of clarification comments and proposed language changes for the text of the mining and reclamation plan are identified in the attached review document. Our comments are listed under the applicable Minerals Rule heading. Please review our comments and, if correct, please incorporate these comments into the final version of the mining and reclamation plan. A clean, updated copy of the tentatively approved mining and reclamation plan (with the appropriate clarifications and language changes) must be received before we can grant final approval of the revised large mining notice.

We will proceed to publish a formal public notice of our tentative approval decision. The notice will begin a 30-day public comment period. If no substantive comments are received during this 30-day period, we will be prepared to grant final approval of your permit application. The appropriate reclamation surety and a Reclamation Contract agreement (Form MR-RC) must also be received before final approval to commence operations can be issued.

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Ronald Bosshardt  
M/039/002  
September 10, 1999

Redmond has posted a \$228,000 interim surety. The total surety for this project has been determined to be \$235,100. You may submit a new surety for the total amount or post an additional \$7,100 to accompany the present surety. Please inform us what type of surety you will post so we can provide you with the correct forms.

If you have any questions regarding this review document, please contact me, Lynn Kunzler, Tony Gallegos, or Tom Munson of the Minerals Staff. Thank you for your patience and continued cooperation in completing this permitting action.

Sincerely,

A handwritten signature in black ink that reads "D. Wayne Hedberg". The signature is fluid and cursive, with a long horizontal stroke at the end.

D. Wayne Hedberg  
Permit Supervisor  
Minerals Regulatory Program

jb  
Attachment: Review  
cc: Arjun Ram, Consultant  
Rhett M. Roberts, President-Redmond Minerals  
o:\review\M39\_02.RVW

## REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

Redmond Minerals, Incorporated

South RCR Salt Mine

M/039/002

September 8, 1999

### R647-4-105 - Maps, Drawings & Photographs

#### **105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)**

*As a result of the 8/24/99 meeting between Tony Gallegos of the Division and Arjun Ram, consultant for Redmond Minerals Inc., several clarifications regarding the Treatments Map received June 30, 1999, have been noted. Subsequently, a revised version of the Treatments Map was received on August 26, 1999 which included a number of the clarifications discussed. Please include the clarifications described below on the final version of this map, and in the final version of the text, where appropriate:*

*The cross hatched areas identified in the map key as "Areas to be Reclaimed" include specific mine features to be reclaimed and also areas adjacent to these features which were not identified previously as being disturbed or requiring reclamation. From the 8/24/99 meeting the Division understands these adjacent areas have been impacted or disturbed in some way by mining operations. Please describe the nature of the disturbance in these adjacent areas and the reclamation treatments to be performed in the final version of the mining and reclamation plan text. For cost estimation purposes, the Division has assumed these adjacent areas will be disked, receive composted manure and be drill seeded. The total adjacent hatched areas to be reclaimed is estimated by the Division as 40.22 acres.*

*The garbage dump GD-3 (0.20) acres is shown on the revised map as being reclaimed, although it is located within the variance region SMP-2. Based on the meeting, the Division acknowledges that GD-3 is not proposed to be reclaimed and the cross hatching on this map is in error. Please correct this error on the final version of the Treatments Map.*

*An arc shaped feature east of CW-3 and CW-4 is hatched to indicate this area will be reclaimed; however, this feature has not been identified. Another feature located west of CW-4 has no identification, but is also hatched to indicate reclamation. These features are areas which have been impacted by non-specific mining activities which will be reclaimed. Please describe the nature of the disturbance in these areas and the reclamation treatments to be performed in these areas in the final version of the mining and reclamation plan text. For cost estimation purposes, the Division has assumed these areas will be disked, receive composted manure and be drill seeded.*

*Three features shown on the map are labeled as "Clay Hill." Portions of these clay hills have been disturbed by mining activities. These clay hills are described as being devoid of vegetation, and are included in a border indicating a variance is sought for these areas. See variance section for the Division response to this variance.*

*The feature at the north end of the project area is labeled as "Exploration Area." This area was disturbed by exploration activities. Please describe the activities which have taken place*

*in this area and proposed reclamation in the final version of the mining and reclamation plan text. For cost estimation purposes, the Division has assumed this area will be disked, receive composted manure and be drill seeded.*

*Several features are shown on the Treatments Map with a colored border indicating these areas are included in a variance request; however, a specific text description of the variance request was not provided in this recent response, or in the previous response. These features are the old mine areas OM-1 and OM-2, and the mine dumps MD-1 and MD-2. Please see the discussion under the variance section for these sites.*

#### **R647-4-106 - Operation Plan**

##### **106.3 Estimated acreage disturbed, reclaimed, annually.**

*A table of acreage was prepared by the Division using the revised Treatments Map received August 26, 1999. A copy of this acreage table is attached to the reclamation cost estimate. Please review this table and provide us with corrections if necessary. Please enter/correct the acreage in the appropriate text section of the final version of the mining and reclamation plan. (AAG)*

#### **R647-4-112 - Variance**

The Division would like to clarify its position on granting variances for pre-law disturbances (grandfathered areas). While we would like to see these sites eventually reclaimed, you have no obligation to do so, provided you do not re-disturb these areas. A variance to perform reclamation is only applicable if they are not re-disturbed. If it is necessary to re-disturb these areas, then you do have an obligation to reclaim. The Division would then consider variances from meeting the revegetation success standards or from performing certain treatments (i.e. replacement of topsoil) due to the nature of the sites. Also, variances are not needed for facilities or structures such as roads and buildings that are approved for the post-mining land use.

*A variance was requested from Rule R647-4-111.13: Revegetation, for facilities and roads that are proposed to be retained for post mining land use. Assuming that the additional clarification we have requested above regarding these items is sufficient to approve the proposed post mining land use, a variance from revegetation of these areas would not be necessary.*

*A variance was requested from Rule R647-4-111.13: Revegetation, for the clay pits, clay waste piles and clay hills as shown on the Reclamation Treatments Map.*

*At this time, it appears that only a small portion of the clay hills have been disturbed by past mining activities. The majority of the clay hills are not within the proposed area for mining. If they are not disturbed, a variance for revegetation is not needed. If they will be mined, it needs to be made clear in the plan and maps that they will be mined.*

After reviewing the photos provided for these areas, we agree that current vegetation is sparse. It can be assumed that the current clay pits may also have been sparsely vegetated prior to mining. Again, the revegetation standard would reflect a lower cover value. The vegetation report indicated that the

vegetation cover on these areas was probably about 5%. At this time, the Division asks that the areas disturbed by mining activities be seeded. The Division will grant a variance for meeting the revegetation success standard of 30% vegetation cover proposed for other areas at the mine and will work with Redmond to develop an appropriate standard. This would apply to CM-1 thru CM-6 and the three clay hills identified on the Treatments Map. (LK)

#### **Variance Request R647-4-111.7 -Highwalls**

##### Salt Mines

*The highwall locations for the North Salt Mine (SM-1, 1.7 acres) and South Salt Mine (SM-2, 3.0 acres) are identified in the attachments to the June 30, 1999 response. The attachments identify highwall areas with slopes of 45 degrees or less using cross hatching. At SM-1 the highwall sections steeper than 45 degrees are: the west perimeter south of the road and north of the south end, the east perimeter north of the underground opening and south of the road, and the east perimeter south of the underground opening and north of the south end. At SM-2 the highwall sections steeper than 45 degrees are the east and west sides in the mid section of the pit. The highwalls at the north and south end of SM-2 are less than 45 degrees. The Division will grant a variance from the 45 degree highwall stabilization requirement for those highwall sections steeper than 45 degrees as identified in these attachments. (AAG)*

##### Clay Mines

*The Division acknowledges that no highwall variances are requested for the clay mines, therefore, all clay mine highwalls will need to be stabilized at a final angle of 45 degrees or less. A variance from the revegetation requirement is being requested for clay mines CM-1, CM-2, CM-3, CM-4, CM-5, CM-6. Please see the revegetation variance section for Division comments regarding the revegetation variance request. (AAG)*

*As a result of the August 24, 1999 meeting with Arjun Ram, several clarifications regarding the variance requests which were not included in the text have been noted. These clarifications are listed below:*

*A variance from all reclamation requirements is requested for the old mine areas OM-1 and OM-2 on the basis that these areas were created prior to the Utah Mined Land Reclamation Act. (AAG)*

*These areas will be grand-fathered and will not require any reclamation so long as they are not re-disturbed. (LK)*

*A variance from all reclamation requirements is requested for the mine dump areas MD-1 and MD-2 on the basis that these areas were created prior to the Utah Mined Land Reclamation Act. Mine dump MD-3 will be reclaimed by Redmond. (AAG)*

*These areas will be grand-fathered and will not require any reclamation so long as they are not re-disturbed. (LK)*

*A variance from all reclamation requirements is requested for the salt mine SM-1, the overburden piles OB-1, OB-2, and the additional area within the "Disturbed Area - Variance Sought" border as identified in the map key. The justification for this variance request is that these areas were created prior to the Utah Mined Land Reclamation Act and these areas have not been utilized by Redmond.*

*These areas will be grand-fathered and will not require any reclamation so long as they are not re-disturbed. (LK)*

*A variance from all reclamation requirements is requested for the two clay hills located adjacent to clay mine CM-5. These clay hills are not specifically included in the text as areas to be mined or used for other mining related purposes. The justification for this variance request is that these hills are barren with no topsoil or significant vegetation. The current mine plan does not describe or propose any mining activities for these clay hill areas. Redmond would need to amend the mine plan to include these clay hills before the Division would consider granting a variance. (AAG)*

*Please make the appropriate corrections to the final version of the Treatments Map for those areas which the Division has agreed to grant variances and those areas which have not been granted variances. (AAG)*

#### **R647-4-113 - Surety**

*The Division has prepared a revised reclamation estimate based on the response letter, information from the meeting with Arjun Ram, and the revised Treatments Map. A copy of the revised estimate is attached for your review. Comments regarding the revisions are listed below. The amount of reclamation surety estimated by the Division is \$235,100 in terms of year 2004 dollars. Please review these comments along with the cost estimate and inform the Division of any needed corrections.*

*The supporting calculation page "calcs" for the surety estimate contained an error in calculating the material volumes to be removed from the salt waste areas for use in regrading slopes. The volumes were off by a factor of 10. This error has been corrected in the attached surety estimate revised by the Division.*

*The supporting calculation page of the surety estimate listed the area needing one foot of topsoil as 15 acres for a volume of 24,200 CY. The note in this same section states that approximately 1/4 of the total area to be reclaimed will require topsoil placement. Using the revised acreage from the August 26, 1999 Treatments Map this would be 1/4 of 79.01 acres, or approximately 19.75 acres. The Division has modified the surety estimate using this acreage to calculate the volume of topsoil to be replaced in combination with topsoil volumes for the salt waste piles (six inch depth) and the brine ponds (12 inch depth).*

*The surety estimate in the response listed the same volume of topsoil under three different methods of topsoil replacement. Based on the meeting with Arjun Ram on August 24, 1999, the Division has*

*modified the estimate to include one method of topsoil replacement (FE loader, truck and dozer) for the corrected volume.*

*The surety estimate did not specifically include a line item for rinsing/flooding salt contaminated soils prior to covering with six inches of soil and seeding as mentioned in the text of the June 30, 1999 response. Based on the meeting with Arjun Ram it was determined that this treatment would be required for the four salt waste pile areas SW-1 through SW-4. The salt wastes in these areas would be removed for use in backfilling slopes and then the waste areas would be ripped and flooded. The total area for these features is 3.07 acres. It was assumed that one water truck and driver could satisfactorily flood these areas over a total time of eight hours. The volume of soil required to cover 3.07 acres with six inches is 2,476 cubic yards. The Division has modified the surety estimate to include this volume in the topsoil replacement costs.*

*The surety estimate did not specifically include a line item for applying 5 tons/acre of composted manure as mentioned in the text of the June 30, 1999 response. Based on the meeting with Arjun Ram it was determined that all areas which were to be seeded should receive composted manure. This is due to the general lack of organic materials in the soils at the site, as demonstrated by the soil analyses. With the application of composted manure there is no need for additional fertilizer applications. The Division has modified the surety estimate to include a cost for composted manure and omitted the line item for fertilizer.*

*The surety estimate did not specifically include a line item for covering brine ponds BP-(1-3) with 12 inches of topsoil and revegetated as described in the text. Brine ponds BP-1 (0.33 acre) and BP-2 (0.17 acre) are one foot deep, while BP-3 (0.58 acre) is ten feet deep. These ponds will require grading to avoid leaving impounding features. The volume of material required to grade these features flat would be 10,164 cubic yards. The volume needed to cover the 1.08 acre area with one foot of topsoil is 1,742 cubic yards. The Division has modified the surety estimate to include the costs for topsoil replacement and grading.*

*The surety estimate included line items for ripping 4.3 acres of pit roads, ripping another 4.3 acres of roads, and regrading 4.3 acres of roads. The Treatments Map received June 30, 1999, did not include a specific acreage for roads. The revised Treatments Map received August 26, 1999 does include an acreage for roads being reclaimed based on the linear distance and a 20 foot road width. The Division has modified the surety estimate to reflect costs for ripping, regrading and seeding the entire road area.*

*Section 110.2 of the response stated approximately 9.21 acres have topsoil which was stripped and stockpiled. The response further stated this figure was rounded to 15 acres to cover other possible areas which will need topsoil and the remaining 53.33 acres have existing topsoil and will be disked, fertilized and revegetated ( $68.33 - 15 = 53.33$ ). Based on the meeting with Arjun Ram, the Division will use the assumption that approximately 1/4 of the total cross hatched area to be reclaimed on the map will require topsoil replacement as discussed in a previous section of this letter.*

*As a clarification, overburden areas OB-1 and OB-2 are not proposed to be reclaimed, yet they are not specifically included in a variance request. These areas are located within the "Disturbed Areas - Variance Sought" region in the northern end of the project area. This region has been described by Redmond as an area of "Grand-fathered" disturbances, and also includes salt mine SM-1. Please see the comments under the variance section.*

*An allowance of 10 acres was added to the disturbance for future development. The location of this 10 acre expansion was not provided. Based on the meeting with Arjun Ram, the Division understands this expansion acreage to be a floating area which has not yet been identified. The intent of including this expansion acreage was to allow Redmond to begin work on a new area without the immediate need for an adjustment in the reclamation surety. Including this floating acreage within the permit area covered by the surety estimate is acceptable to the Division provided Redmond notifies the Division in writing of any proposed expansion prior to creating any new disturbances.*

*The surety estimate did not include a cost for reclamation of the exploration area on the north end of the property. There is no access road shown leading to this exploration area. Based on the meeting with Arjun Ram, and the August 26, 1999 Treatments Map, this exploration involves 1.66 acres of disturbance. This site was described as being accessed by cross country travel from an existing road. The Division has modified the surety estimate to reflect reclamation of this exploration area.*

*Based on the last Division site inspection and the meeting with Arjun Ram it was determined that there are disturbed areas adjacent to the south salt mine SM-2 along the eastern border. The disturbance extends approximately one half the length of the pit. This area has been disturbed as a result of backfilling the SM-2 pit. The August 26, 1999 version of the Treatments Map identifies this area as 1.86 acres. The Division has modified the surety estimate to include disking and reseeding of this area.*

*Measurements of the highwall plan views in the response show approximately 955 linear feet of highwall at SM-2 are greater than 45 degrees, and approximately 1,214 linear feet of highwall at SM-1 are steeper than 45 degrees. The response surety estimate included 2,000 linear feet of safety berming for pit highwalls. Given Redmond's intent to reduce these highwall hazards by backfilling or regrading, the 2,000 linear feet figure was not modified in the revised estimate.*

*The Division has escalated the revised surety estimate using the current escalation factor of 3.27% rather than the old factor of 2.24%. (AAG)*